

Claims

1. Electric power source comprising a fuel cell (1), at least one flow channel (5a) comprising an inlet and an outlet respectively connected to a reactive fluid source and to a tank (10), an inlet valve being arranged between the reactive fluid source and the inlet of the flow channel (5a), power source characterized in that it comprises means for closing the inlet valve (11) for a predetermined first time period (T1) and means for opening the inlet valve (11) for a predetermined second time period (T2) much shorter than the first time period (T1), so as to feed the fuel cell (1) with reactive fluid from the tank (10) during the first time period (T1), and, during the second time period (T2), to fill the tank (10) with reactive fluid and to evacuate the water accumulated in the fuel cell (1) to the tank (10).
2. Power source according to claim 1, characterized in that it comprises two flow channels (5a, 5b) respectively connected on the one hand to first and second tanks (10) and on the other hand to a hydrogen source and to an oxygen source.
3. Power source according to one of the claims 1 and 2, characterized in that the tank (10) is arranged at a lower level than the fuel cell (1) so as to trap the water in the tank (10).
4. Power source according to one of the claims 1 and 2, characterized in that the tank (10) comprises means for physical or chemical trapping of the water.

5. Power source according to claim 4, characterized in that the trapping means comprise a porous material.

6. Power source according to claim 4, characterized in that the trapping means
5 comprise a salt.

7. Power source according to any one of the claims 1 to 6, characterized in that the volume of the tank (10) is much greater than the volume of reactive fluid contained in the fuel cell (1).

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8. Control process of a power source according to any one of the claims 1 to 7, characterized in that it comprises:

- the tank (10) being filled with reactive fluid, closing of the inlet valve (11) of the flow channel (5a) for a predetermined first time period (T1),

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- opening of the inlet valve (11) for a predetermined second time period (T2), so as to evacuate the water accumulated in the fuel cell (1) during the first time period (T1) to the tank (10) and to refill the tank (10) with reactive fluid, the second time period (T2) being much shorter than the first time period (T1).

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9. Process according to claim 8, characterized in that the second time period (T2) has a duration of about a few fractions of seconds.

10. Process according to one of the claims 8 and 9, characterized in that the tank (10) is heated so as to keep its content at a temperature close to the operating
25 temperature of the fuel cell.